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Rotation as an origin of high energy particle collisions

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Abstract

© 2016 World Scientific Publishing Company. We consider collision of two particles in rotating spacetimes without horizons. If the metric coefficient responsible for rotation of spacetime is big enough, the energy of collisions in the center of mass frame can be as large as one likes. This can happen in the ergoregion only. The results are model-independent and apply both to relativistic stars and wormholes.

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Keywords

acceleration of particles, center of mass, Particle collision